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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/647,107	08/25/2003	Masaya Ishida	524242000700	9840

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EXAMINER

VANNUCCI, JAMES

ART UNIT PAPER NUMBER

2828

DATE MAILED: 08/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/647,107

Applicant(s)

ISHIDA ET AL.

Examiner

Jim Vannucci

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 August 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8-25-03.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

1. Claims 21-26 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on July 7, 2005.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stokes et al.(6,791,259) in view of Itoh et al.(6,337,035).

Claim 1, figure 5 of Stokes discloses a light source(43) that emits primary light, and a phosphor(45) that absorbs at least part of the primary light emitted from the light source and emits secondary light having a longer peak wavelength than the primary light(col. 5, lines 28-30).

The size of the particles disclosed in Stokes are slightly larger than those recited.

Itoh discloses a phosphor that is formed of fine-particle crystals of a III-V group compound semiconductor(col. 1, lines 47-55) having a volume of 2 800 cubic nm or less(col. 2, lines 18-20).

Claims 2 and 12, a III-V group compound semiconductor where 50 % or more of the III group elements is indium, and 95 % or more of the V group elements is nitrogen is within the disclosure of Itoh(col. 3, lines 12-22).

Claims 3 and 13, the fine-particle crystals of the III-V group compound semiconductor disclosed in Itoh have a predetermined volume distribution so that the secondary light emitted from the phosphor has a wavelength distribution corresponding to the volume distribution of the fine-particle crystals.

Claims 4 and 14, the III-V group compound semiconductor disclosed in Itoh can be a nitride semiconductor(col. 3, lines 17-21) and the fine-particle crystals can each be composed of a single portion having a uniform energy band gap.

Claims 5 and 15, the III-V group compound semiconductor disclosed in Itoh can be a nitride semiconductor(col. 3, lines 17-21) and the fine-particle crystals can each be composed of a first portion and a second portion that encloses the first portion and that has a greater energy band gap than the first portion(col. 3, lines 1-17).

Claims 6 and 16, Stokes discloses that the fine-particle crystals of the III-V group compound semiconductor can be dispersed in glass(col. 6, line 37) and that the peak wavelength of the primary light emitted from the light source is in a range from 380 nm to 500 nm, both ends inclusive(col. 6, lines 53-54).

Claims 7 and 17, Stokes discloses that the fine-particle crystals of the III-V group compound semiconductor are dispersed in resin(col. 6, lines 39-40) and the peak wavelength of the primary light emitted from the light source is in a range from 395 nm to 500 nm, both ends inclusive.

Claims 8 and 18, figure 7 of Stokes discloses a filter(56) that can be set to function as recited(col. 8, lines 3-12) and is placed in an optical path between the light source and the phosphor.

Claims 9 and 19, the filter(56) disclosed in figure 7 of Stokes is also provided in an optical path of the secondary light emitted from the phosphor and can function as recited(col. 8, lines 3-12).

Claims 10 and 20, the light source(43) disclosed in figure 5 of Stokes is a light-emitting device using a nitride-based III-V group compound semiconductor(col. 5, lines 15-25).

Claim 11, the fine-particle crystals disclosed in Itoh each measure 14 nm or less in two directions perpendicular to their longest side(col. 2, lines 18-20).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the phosphor disclosed in Itoh in the device disclosed in Stokes to obtain improved luminous characteristics as disclosed in Itoh(cols. 1 & 2).

### ***Correspondence***

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Jim Vannucci whose phone number is (571) 272-1820.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center whose telephone number is (703) 308-0956.

Papers related to Technology Center 2800 applications only may be submitted

to Technology Center 2800 by facsimile transmission. Any transmission not to be considered an official response must be clearly marked "DRAFT". The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Technology Center Fax Center number is (571) 273-8300.



James Vannucci